

In the Claims

1 1. (currently amended) A method for converting range data of an object to a
2 model of the object, comprising:

3 generating an adaptively sampled distance field from the range data,
4 wherein the range data includes a plurality of range images; and

5 editing the adaptively sampled distance field to produce the model;
6 and

7 wherein the generating further comprises:

8 converting the range images to a plurality of range meshes in a
9 single coordinate system; and

10 generating the adaptively sampled distance field from the
11 plurality of range meshes.

1 2. (original) The method of claim 1 further comprising:

2 converting the adaptively sampled distance field to a triangle model.

1 3. (cancelled)

1 4. (cancelled)

1 5. (original) The method of claim 1 wherein the generating further
2 comprises:

3 defining a candidate cell of the adaptively sampled distance field;

4 determining and storing distance values of the candidate cell in a
5 bounded distance tree;

6 recursively subdividing the candidate cell into subdivided cells of the

7 adaptively sampled distance field while determining and storing
8 corresponding distance values of the subdivided cells in the bounded
9 distance tree until a termination condition is reached; and
10 appending the distance values to the corresponding cells to generate
11 the adaptively sampled distance field of the graphics object.

1 6. (previously presented) The method of claim 2 wherein the converting the
2 triangle model, the adaptively sampled distance field including includes a
3 plurality of surface cells storing distance values having corresponding
4 gradients, comprising, and the converting further comprises:
5 assigning a vertex to a center location of each surface cell,
6 connecting the vertices of neighboring surface cells to form triangles
7 while satisfying a predetermined constraint, and
8 moving each vertex, in a single step, to a new location according to
9 the distance value and corresponding gradient of the vertex to substantially
10 conform the triangles to the surface of the object.

1 7. (previously presented) A method for converting range data of an object to
2 a model of the object, wherein the range data includes a plurality of range
3 images, comprising:
4 converting the range images to a plurality of range meshes in a single
5 coordinate system;
6 generating the adaptively sampled distance field from the plurality of
7 range meshes; and
8 editing the adaptively sampled distance field to produce the model.